THE TEETH
AND THEIR
PRESERVATION.
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THE TEETH

AND THEIR

PRESERVATION.

BY

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MDCCCL.



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PREFACE.

HAVING found that the teeth of many persons are in a measure neglected and destroyed, for the want of a little knowledge of the means necessary for their management and preservation, I was induced to believe that a condensed work, free from technical terms, would be serviceable to those who have not the opportunity or inclination to study the larger works on the subject.

5, NEW BOND STREET.
1850.

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THE TEETH

AND THEIR

PRESERVATION.

THE TEETH AND TIME OF THEIR APPEARANCE.—In the first or temporary set, which is generally complete at about the age of two years, there are twenty teeth, ten in each jaw, and although small they are sufficient to fill the jaws at that age. They are delicate teeth, have very thin enamel, suited only for childhood, and in the same manner as the teeth of the permanent set, are subject to decay.

Fig. 1.

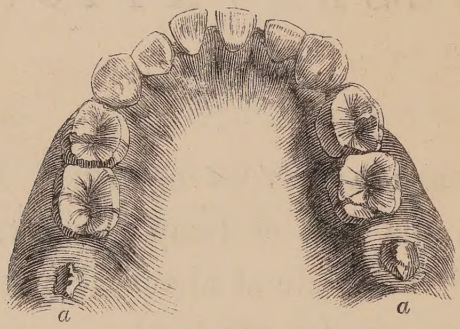


Section of a temporary tooth. *a*, The crown or part covered by enamel; *b*, the root or fang; *c*, the central or nerve cavity.

At the age of six or seven years, the first teeth that make their appearance, of the

second or permanent set, come through the gum, beyond the temporary set, the jaws having grown sufficiently to admit them. These teeth, called the first molars, are the largest of all, and the most liable to decay.

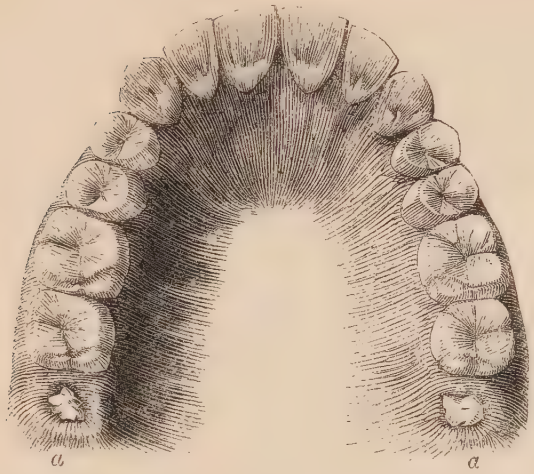
Fig. 2.



Upper jaw at about the seventh year. *a*, *a*, The first permanent teeth just appearing through the gum beyond the temporary set.

Between the ages of seven and twelve years the twenty temporary teeth are replaced by the same number of permanent ones, and during the same period the jaws again enlarge sufficiently to admit of the second molar teeth coming through, and in the course of the next eight or ten years, the jaws enlarge still further, admitting the wisdom teeth, making in all thirty-two, sixteen in each

Fig. 3.

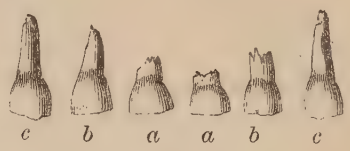


Upper jaw at about the twentieth year. *a*, *a*, The wisdom teeth, or last of the permanent set, just appearing through the gum.

jaw. The twelve molar or double permanent teeth, are thus never changed.

IRREGULARITIES.—The temporary teeth have roots like the permanent ones, but they are gradually absorbed previously to their being replaced.

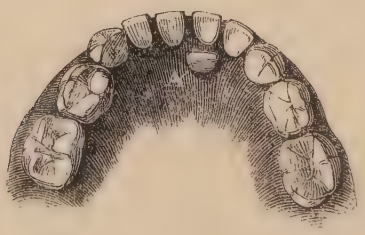
Fig. 4.



Six upper front teeth of a child about seven years of age, showing the absorption of the roots. *a*, *a*, The central incisors or front teeth with the roots absorbed, and when in the head at this age are quite loose; *b*, *b*, the lateral incisors which remain in the head some time longer than the centrals; *c*, *c*, the cuspidati or canine teeth, with the roots nearly perfect, these teeth being usually in the head until about the tenth year.

Sometimes the absorption progresses slowly, and before the first teeth have loosened, the permanent ones make their appearance, either before or behind the temporary ones.

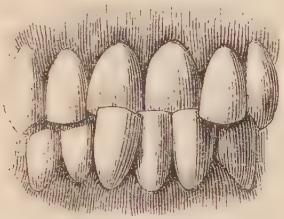
Fig. 5.



Lower jaw of a child about seven years of age, in which the permanent tooth, A, has come through the gum behind the temporary teeth.

In such cases the temporary teeth must be extracted, and the irregular ones will then gradually grow into their proper places. They can, at the same time, be much assisted by the child pressing them with its fingers. If allowed to grow irregularly to their full height, the opposing teeth will strike them every time the mouth is closed, and keep them from taking their proper places in the arch of the jaw.

Fig. 6.

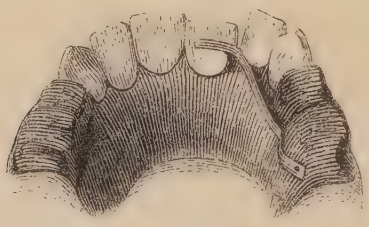


Front view of an irregular set, showing the opposing teeth shuting over the irregular ones.

To remedy this defect, a regulating plate must be made to fit the mouth, covering the tops of the back teeth to keep them a little apart, and having a spring attached, adjusted so as to press on and move the irregular teeth; the spring imitating, as nearly

as possible, the pressure of the finger, with the advantage of being continuous.

Fig. 7.



Upper set with regulating plate, showing the action of the spring.

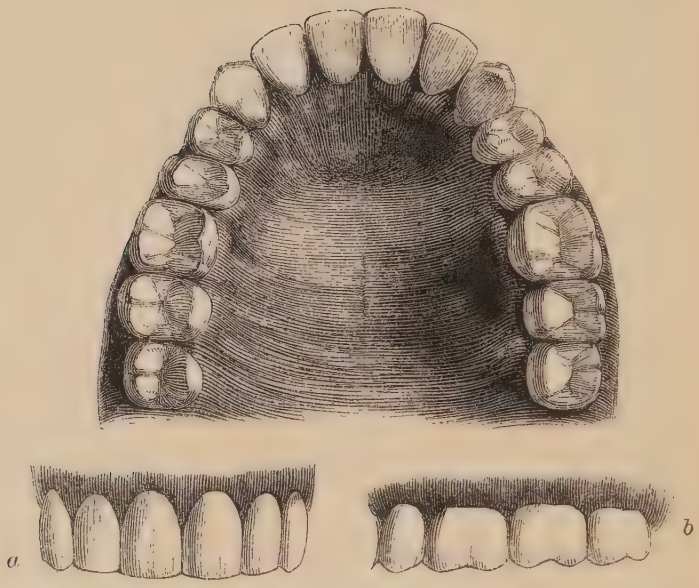
The regulating plate is sometimes placed on the opposite jaw, with a projecting piece to strike the irregular teeth every time the mouth is closed; but this is a harsh, imperfect plan, and unnecessarily prolongs the cure, as during sleep, the teeth invariably incline to their former position.

If the teeth are early attended to, a regulating plate will seldom be required; a silk ligature, or band of caoutchouc, attached to the adjoining teeth, so as to press on the irregular ones, will generally be found sufficient.

When the temporary teeth occasion pain, and prevent the child from eating or sleeping,

they should be extracted, although it may cause the arch to contract, and make the permanent teeth irregular. This, at all times, must be a secondary consideration when compared with the health of the child; as almost any deformity can be remedied between the ages of seven and sixteen, and, in a very great many cases, after that age.

Fig. 8.



A perfectly formed upper set of teeth, showing their masticating surfaces. *a*, Front view; *b*, side view.

Fig. 9.

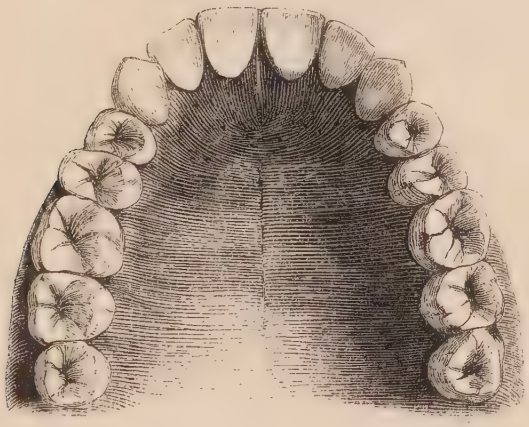


Perfectly formed upper incisor or front teeth, separated from each other, and admitting the fluids of the mouth and fine particles of food to pass freely between them.

DECAY AND ITS CONSEQUENCES.—If the teeth are regular in their arrangement, well formed,

perfectly covered with enamel, without cracks or deep indentations, and have the gum perfectly filling the spaces between them, or if each tooth is quite separated from the others, they will be little liable to decay, and under ordinary circumstances will last for an indefinite period.

Fig. 10.

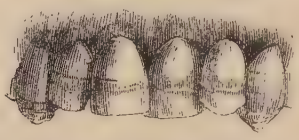


An imperfectly formed upper set of teeth, with deep indentations on their masticating surfaces, showing great liability to decay.

If, on the contrary, the teeth are crowded, irregular, and badly formed, deficient of enamel, or with deep indentations on their surfaces, and have the sides hollowed and imperfectly filled by the gum, they will

be extremely subject to decay, for the reason, that decay is generally caused by the juices of the mouth, or saliva, and fine particles of food, lodging in their indentations and interstices, and chemically decomposing

Fig 11.



Upper incisor teeth irregularly arranged, and with very defective enamel.

them; therefore, as they present more or less of these imperfections, so may their probable durability be determined.

Fig. 12.



Section of a perfectly formed tooth. *c*, The enamel; *b*, the bone of which the body of the tooth is formed; *a*, the central or nerve cavity which always bears a resemblance to the shape of the tooth itself.

Fig. 13.



Section of an imperfectly formed tooth. *a*, Deep indentation in the enamel where decay is certain to commence.

Decay never commences on the plain, smooth, prominent parts of the teeth, only

in their irregularities and indentations where the tooth-brush or tongue cannot reach, and where the bone is scarcely covered by enamel.

From the decomposing matter lodging in these places it ultimately reaches the bone, which is less able to resist its action than the enamel that covers it. Decay then progresses towards the centre, with more or less rapidity, according to the structure of the tooth, where, from the pressure of the decayed or softened bone, or from the action of the air and saliva, the nerve becomes irritated and inflamed, which is the immediate cause of tooth-ache.

Fig. 14.



Sections of three teeth illustrating the progress of decay.

When the bone is of a porous texture, the decay progresses with such rapidity that

the tooth becomes excavated, and during the process of mastication, the enamel falls in, when the tooth is found to be nearly destroyed, which before, from the small opening in the enamel, was supposed to be all but perfect.

Fig. 15.



Section of a tooth excavated by decay.

The constitution and state of health, also, have considerable effect on the teeth. On testing the saliva, acid is frequently detected, and the teeth, though well formed, are sure to give way under its influence.

Fig. 16.



Sections of three teeth, showing the size of the pulp cavity at different periods of life, also the difference in thickness of the bone of the teeth in youth and old age.

The earlier in life the teeth begin to decay, the more rapidly are they completely destroyed, the pulp or nerve cavity in young teeth being large, there is consequently only a

small body of bone to be destroyed ; but as they advance, the bone becomes denser in texture, and thicker towards the nerve, so much so as in old age to almost fill up the central cavity.

TARTAR.—Next to decay, in its destructive effects on the teeth, is the accumulation of tartar, to which every person is more or less liable; this is a deposit from the sa-

Fig. 17.



Two teeth on which, through neglect, tartar has been allowed in different degrees to deposit.

liva, and generally begins to settle at the edge of the gum, principally behind the front teeth of the lower jaw. As it accumulates it hardens, and its rough edge presses on the gum, which becomes inflamed and bleeds on the slightest touch, and gradually recedes from the sockets of the teeth until they are destroyed; the teeth then, for want of support, become loose, and ultimately drop out.

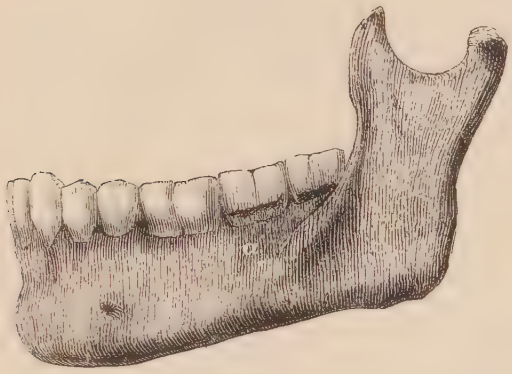
When first deposited it is soft, and can

be easily removed with the tooth-brush, but if allowed to remain until it hardens, it can only be removed with small instruments. Sometimes it collects in such large quantities, that when the sockets are nearly destroyed, it acts as a cement, holding the teeth together. When in this state, though in every respect highly offensive, the teeth will not bear its removal.

PREVENTION OF DECAY AND ACCUMULATION OF TARTAR.—To prevent decay of the teeth, and the accumulation of tartar, the greatest attention must be paid to cleanliness. The teeth ought to be thoroughly brushed on every part, with a moderately hard and elastic brush, at least twice a day, night and morning, and when there is a deposit of tartar it should be carefully removed, otherwise its rough edge will make the gum bleed every time the brush is used. Many persons finding this to be the case, in order to avoid touching the tender gum, pass over that portion of the teeth which requires the greatest care in cleaning; or, considering the brush too hard, use one that is quite useless from its softness; consequently, decay is often found to commence at the edge of the enamel, where the gum forms a projection. This is the case more especially with the lower molar or wis-

dom teeth, as the cheek and curve of the jaw prevent their being freely got at.

Fig. 18.



Lower jaw, showing decay of the teeth (*a*) at the edge of the gum.

If the tartar be entirely removed, and the frequent use of the tooth-brush, however painful, persevered in, the gum will soon regain its originally healthy state. Though a moderately hard tooth-brush will generally be found sufficient to keep the teeth clean, yet the occasional use of a tooth-powder is beneficial, and becomes necessary where the predisposition to accumulation of tartar is great, or after an illness or any other circumcumstance that has caused the teeth to be neglected. As a tooth-powder, precipitated chalk

will be found very serviceable, to which may be added a little finely powdered myrrh, or orris root. All acid tooth-powders, or lotions containing acid, should be carefully avoided; nothing can be more destructive than such preparations.

STOPPING.—On the first appearance of decay, if the dark spot that is generally observable can be filed away, and the part properly polished and kept perfectly clean, it will be arrested; otherwise, the decayed part must be clearly cut away with small instruments, the cavity perfectly dried, and completely filled with some substance that will resist the corrosive action of the fluids of the mouth; the whole and sole purpose of a stopping being to form a perfect plug, and for this purpose gold is the very best substance. It must be used in the form of thick leaf, and requires a considerable degree of pressure to make it solid, and unfortunately on this account, cannot be used in all cases, as after the decayed part is cut away a portion of bone should remain to protect the internal cavity, otherwise the stopping will press on the nerve and cause intense pain.

When the last portion of bone is slightly

affected, the tooth may be preserved for some time, by using an amalgam as a stopping; this is put into the tooth in a soft state, and in a few hours hardens and slightly expands, but this, on account of its changing colour, is only used when gold is inapplicable.

Fig. 19.



Sections of three teeth illustrative of stopping. *a*, Section of a stopped tooth, in which the decay had just reached the bone; *b*, section of a stopped tooth, in which the decay had nearly reached the nerve cavity; *c*, section of a stopped tooth, in which the stopping pressed on the nerve and caused acute tooth-ache.

Attempts are frequently made to destroy the nerves of decayed teeth, and thus stop the pain, but even when successful, they are rarely attended with permanent benefit; the dead teeth or roots being left in the jaw, cause more or less inflammation and frequently abscess, sometimes ending in the destruction of a portion of the jaw and the adjoining teeth; they also prevent the sound teeth, on the side where they are, being used or cleaned, consequently they either decay,

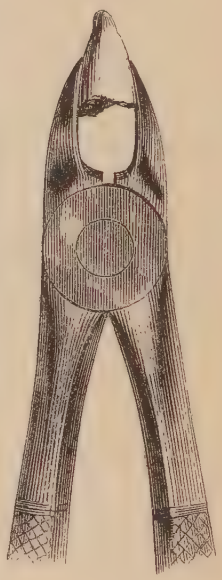
or become covered with tartar, and are ultimately lost.

Stopping the teeth being entirely a preventive measure, should seldom be attempted when the exposure of the nerve has been the cause of pain.

Many who have suffered from having a tooth injudiciously stopped, consider it useless in all cases; but a knowledge of what a stopping is really intended to effect, must convince every one that, when well and timely performed, no operation connected with the teeth, can be attended with better success.

EXTRACTION.—When the teeth require to be extracted, much of the pain and risk of breaking them during the operation will be avoided, if properly adapted instruments are used. What are called forceps are the best for the purpose, and when well adapted, a pair for each tooth, entirely supersede the instrument known as the tooth-key, in the use of which there is great risk of injuring the gum, and breaking the teeth and sockets. It often happens, where the key is used, that the gum is so bruised and lacerated, that weeks elapse before it heals. The gum is a mere covering to the alveolar processes or sockets, and attached to the teeth, only at its edge, the forceps if properly adapted

Fig. 20.



Forceps adapted for the extraction of roots.

allow it freely to separate, and grasping the teeth where they are strongest, permit the force to be applied instantaneously in whichever direction the roots are felt to incline. With small, fine-pointed forceps, roots can be extracted with comparatively little pain.

Some teeth cannot be extracted without one of the fangs, or part of the socket breaking, but the tooth-key used in such cases causes a dreadful fracture, and sometimes brings away two or three teeth together, as the power of this instrument can only be effectively applied in one direction.

Fig. 21.

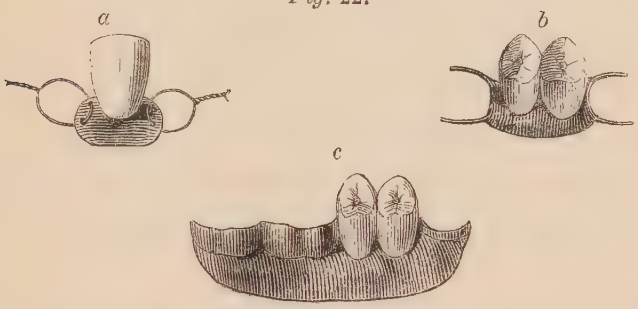


A tooth that could not be extracted without the root, or a part of the socket breaking.

Artificial teeth, when properly adapted and made on a good principle, in all cases restore the power of perfect articulation, and, with rare exceptions, that of perfect mastication. When badly constructed, they are generally fastened by wires twisted round, or grasping tightly the adjoining teeth, and, from the small surface of gum the gold covers, they are unsteady in the mouth, and the continual movement causes the wires to cut, or drag out of their sockets, the teeth to which they are fastened. Hence it frequently happens, after one tooth has been worn a short time, three are required, then five, and so on, until the whole set is completely destroyed. Besides, these teeth can rarely be taken out by the wearer, and as they cannot be properly cleaned in the mouth, the collection of matter under their surfaces, causes the breath to become highly offensive, and of this, unfortunately,

the wearer is often quite ignorant. When they are well constructed, and, according to the case, cover a sufficient surface of the gum, they are firm in the head, require no wires nor

Fig. 22.



Artificial teeth constructed on three different principles. *a*, A tooth attached by wires twisted round the adjoining teeth; *b*, two teeth where the wires act as springs, and being forced over the broad part of the adjoining teeth, grasp them tightly at the edge of the gum; *c*, two teeth without wires or clasps, that, from their perfect adaptation, are firm in the mouth, without anything whatever being observable in front of the teeth.

ligatures, and can with facility be taken out of the mouth and replaced, without injuring in the slightest degree the adjoining teeth, thereby insuring that perfect cleanliness so essential to the preservation of the teeth and comfort of the wearer. The easy removal of artificial palates and portions of jaw especially, is highly necessary, their perfect cleanliness being of the first importance. The system of

never taking artificial teeth out of the mouth, cannot be too strongly deprecated. The skill of the dentist is shown in making them firm in the mouth, yet easy to take out and replace, and without anything whatever being observable to show that they are artificial.

Artificial teeth can at all times be adapted, without extracting the roots of teeth that have decayed or broken off, but for the reasons before mentioned (p. 24) their removal is desirable.

The durability of artificial teeth greatly depends on the workmanship, the material used, the constitution of the wearer, and the manner in which they are kept. When the bone of the hippopotamus tooth is used in their construction, it is necessary to have them perfectly adapted in every part, and highly polished, to prevent as much as possible the absorption of the fluids of the mouth; for wherever there is an imperfection, decay quickly commences, and then gradually spreads over their whole surface. As with the natural teeth, too much attention

cannot be paid to cleanliness. Mineral teeth on gold sockets, when applicable, will be found the best kind of artificial teeth, and when well constructed surpass all others both in cleanliness and durability.

The End.

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